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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,622	04/02/2004	Kenji Ootsu	KPO10102	1061
25271	7590	02/16/2006	EXAMINER	
GALLAGHER & LATHROP, A PROFESSIONAL CORPORATION 601 CALIFORNIA ST SUITE 1111 SAN FRANCISCO, CA 94108			TRAN, BINH X	
			ART UNIT	PAPER NUMBER
			1765	

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/816,622	<b>Applicant(s)</b> OOTSU ET AL.	
	<b>Examiner</b> Binh X. Tran	<b>Art Unit</b> 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 and 17-43 is/are pending in the application.
- 4a) Of the above claim(s) 4,6,8,10,24-26,30-32,36-38 and 42-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5,7,9,11-13,17-23,27-29,33-35 and 39-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/800,033.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11-12-04; 04-02-04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species 1B (claims 1-3, 5, 7, 9, 11-13, 17-23, 27-29, 33-35, 39-41) in the reply filed on 12-28-2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 4, 6, 8, 10, 24-26, 30-32, 36-38, 42-44 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12-28-2005.

### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 1-3, 5, 7, 9, 11-13, 18-23, 27-29, 33-35, 39-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the last paragraph of claims 1-2, the phrase "a very short distance" is subjective, vague and indefinite. It is unclear from the claim, what specific distance, that applicants consider as "a very short distance".

Claims 3, 5, 7, 9, 11-13, 18-23, 27-29, 33-35, 39-41 are indefinite because they directly or indirectly depend on indefinite claims 1 or claim 2.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Marchman (US 5,480,049).

Respect to claim 1, Marchman ('049) disclose a method for processing end portion of an optical fiber element (10) having a center core and an peripheral cladding (aka outer cladding) surround said core (See col. 3 line 62 to col. 4 line 4), comprising the steps of:

dipping one end portion of the optical fiber element (10) into an etchant (50) capable of etching the fiber element perpendicularly to level surface (52) of the etchant (See Fig 3, col. 4 lines 5-23);

causing the outer cladding (i.e. peripheral cladding) of said one end portion the fiber element (10) immersed in the etchant to be etched substantially coaxial reduce-diameter portion of the fiber element that is extended upwardly to a certain height from

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the level surface of the etchant that is attached with the etchant which rises upwardly from the level surface into a conical tapered surface portion (22) which is formed between the reduced-diameter portion (24) and un-etched portion (23) of the fiber element (10) (See Fig 3);

terminating the etching once said reduced diameter portion (24) reaches a certain diameter (See Fig 4);

cutting (i.e. cleaved) said reduced diameter portion a point spaced by a distance from the connecting boundary between the tapered surface portion and said reduced-diameter portion toward the reduced-diameter portion so as to leave a reduced-diameter end portion continuously joining to the tapered surface portion (See Fig 5, col. 4 lines 48-61).

Marchman ('049) does not explicitly disclose that the etchant rises upwardly from the surface due to surface tension of the etchant. However, Marchman ('049) clearly teaches the etchant rises upwards (See Fig 3). Further, it is known in physics that all liquid must have a surface tension value. The surface tension is known to create an upward curve on the liquid surface in the capillarity (See evidence in prior art made of record). Base on the law of physics, the examiner maintains that the etchant will inherently rises upward from the surface due to surface tension of the etchant.

Respect to claim 17, Marchman ('049) teaches to time control the etching step and terminating the etching time once said reduced-diameter portion reaches a certain value (col. 4 lines 25-47).

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8. Claims 1, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Marchman (US 5,395,741).

Respect to claim 1, Marchman ('741) disclose a method for processing end portion of an optical fiber element (10) having a center core (18) and an cladding (aka outer cladding) surround said core (See col. 3 line 62 to col. 4 line 4), comprising the steps of:

dipping one end portion of the optical fiber element (10) into an etchant (20) capable of etching the fiber element perpendicularly to level surface (22) of the etchant (See Fig 3-4, col. 4 lines 40-62);

causing the outer cladding of said one end portion the fiber element (10) immersed in the etchant to be etched substantially coaxial reduce-diameter portion of the fiber element that is extended upwardly to a certain height from the level surface of the etchant that is attached with the etchant which rises upwardly from the level surface into a conical tapered surface portion (12) which is formed between the reduced-diameter portion (14) and un-etched portion of the fiber element (10) (See Fig 3-4);

terminating the etching once said reduced diameter portion (24) reaches a certain diameter (2r) (See Fig 4);

cutting (i.e. cleaved) said reduced diameter portion a point spaced by a distance from the connecting boundary between the tapered surface portion and said reduced-diameter portion toward the reduced-diameter portion so as to leave a reduced-diameter end portion continuously joining to the tapered surface portion (See Fig 5, col. 4 lines 63-67).

Marchman ('741) does not explicitly disclose that the etchant rises upwardly from the surface due to surface tension of the etchant. However, Marchman ('741) clearly teaches the etchant rises upwards (See Fig 3-4). Further, it is known in physics that all liquid must have a surface tension value. The surface tension is known to create an upward curve on the liquid surface in the capillarity (See evidence in prior art made of record). Base on the law of physics, the examiner maintains that the etchant will inherently rises upward from the surface due to surface tension of the etchant.

Respect to claim 17, Marchman ('741) teaches to time control the etchant step and terminating the etching time once said reduced-diameter portion reaches a certain value (col. 4 lines 46-53).

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 2, 3, 5, 7, 9, 11, 18, 21, 27, 33, 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchman ('049) in view of Turner (US 4,469,554).

Most of the limitation of claim 2 has been discussed above under Marchman's reference. Claim 2 differs from Marchman by further specifying the outer cover coating film surrounding the cylindrical cladding and the step of removing the coating film in a partial cylindrical portion thereof having a specified length so as to form a coat film-removed section and a residual coating film section at one end portion of the optical fiber element. In a method for etching optical fiber, Turner discloses an outer cover coating (11) surrounding the cylindrical clad (See Fig 1). Turner further disclose the step of removing the coating film (11) in a partial cylindrical portion thereof having a specified length so as to form a coating film-removed section. A residue of coating film (11) the must be present on the end portion of optical fiber in a small amount. It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Marchman in view of Turner by having a coating film surrounding the clad layer and removed the coating film at a specific length because the coating film will act as a cover to protect the optical fiber.

Respect to claims 3, 5, 7, 9 Turner discloses the step of using a coating film (11) applied to the optical fiber element as a level controlling means for restraining the level surface of the etchant before the dipping step (i.e. wet etching step; See Fig 1).



Respect to claims 11, 18, 21, 27, 33, 39, Marchman ('049) fails to disclose a liquid having a specific gravity lower than that of the etchant is mixed into said etchant. Turner teaches to add a second liquid (23) having density lower than that of the etchant (22) (i.e. first liquid) is mixed/added into said etchant (Fig 2-3, col. 4 lines 22-23, Note: the term density is the same with the term "specific gravity"). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Marchman ('049) in view of Turner by adding a liquid having a specific gravity lower than that of the etchant because it will create a substantial non-etching region to protect the upper portion of the optical fiber.

12. Claim is 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Marchman ('049) in view of Laming et al. (US 6,303,041).

Respect to claim 11, Marchman ('049) fails to disclose a liquid having a specific gravity lower than that of the etchant is mixed into said etchant. Laming teaches to add a liquid (40) and/or liquid (50) having density lower than that of the etchant (30) is mixed/added into said etchant (Fig 1, col. 6 lines 33-45, Note: the term density is the same with the term "specific gravity"). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Marchman ('049) in view of Laming by adding a liquid having a specific gravity lower than that of the etchant because it will create a substantial non-etching region to protect the upper portion of the optical fiber and provide diameter control.

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13a. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marchman ('049) as applied to claim 1 above, and further in view of Yamane et al. (US 5,566,262).

13b. Claims 12, 19, 20, 22-23, 28-29, 34-35, 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marchman ('049), Turner and further in view of Yamane et al. (US 5,566,262).

Respect to claims 12-13, 19, 20, 22-23, 28-29, 34-35, 40-41, Marchman ('049) fails to disclose that a plurality of optical fiber elements held in parallel to each other by a single common covering member to thereby form an optical fiber array. Yamane teaches to held plurality of optical fiber elements (12) in parallel to each other by a single common covering member to form an optical fiber array (11) (See Fig 1) and subjecting the optical fiber to an etching process (col. 7 lines 18-30). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Marchman or Marchman and Turner in view of Yamane by forming an optical fiber array because it will reduce the processing time by etching plurality of fiber at the same time.

### ***Conclusion***

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

"Surface Tension" in <http://hyperphysics.phy-astr.gsu.edu/Hbase/surten.html> .

"Surface Tension" in Wikipedia. [http://en.wikipedia.org/wiki/Surface\\_tension](http://en.wikipedia.org/wiki/Surface_tension)

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X. Tran whose telephone number is (571) 272-

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1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*Binh Tran*

Binh X. Tran